REMARKS

Claims 9-12 are pending and under consideration in this application. Claims 10 and 11 have been amended. Support for these amendments can be found throughout the specification as filed. No new matter has been added.

Rejections Under 35 U.S.C. §103(a)

Claims 9-12 are rejected as allegedly unpatentable over LaRosa et al. [a] (U.S. Patent No. 6,727,349) or LaRosa et al. [b] (U.S. Patent No. 6,696,550) in view of Bonnefoy et al. (PCT Publication No. WO 99/58679). 35 U.S.C. §103(c)(1) clearly states:

> Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person (emphasis added).

Common ownership at the time of invention is not required; obligation of assignment of either or both of the alleged prior art subject matter and the claimed invention is sufficient to remove the rejection under 35 U.S.C. §103(a). This is affirmed by MPEP 706.02(l)(2) under the heading "Evidence Required to Establish Common Ownership":

> Applications and references (whether patents, patent applications, patent application publications, etc.) will be considered by the examiner to be owned by, or subject to an obligation of assignment to the same person, at the time the invention was made, if the applicant(s) or an attorney or agent of record makes a statement to the effect that the application and the reference were, at the time the invention was made, owned by, or subject to an obligation of assignment to, the same person (emphasis added).

Therefore, a statement that an application and a reference were owned by the same person is not required, as alleged by the Examiner (see the Office Action at page 3, lines 3-4). A statement that the application and the reference were owned by or subject to an obligation to assign to the same person is sufficient. At the time the claimed invention was made, both LaRosa et al. [a] and LaRosa et al. [b] were owned by, or subject to an obligation of assignment to, Millennium Pharmaceuticals, Inc. (as evidenced by assignments recorded at reel/frame 011196/0894 and

012511/0380, respectively), and the claimed invention was subject to an obligation of assignment to Millennium Pharmaceuticals, Inc. The assignment of this application to Millennium Pharmaceuticals, Inc. was later executed, and the assignment was recorded with the USPTO on April 4, 2004 (at reel/frame 014518/0285). Because at the time the claimed invention was made, LaRosa et al. [a] and LaRosa et al. [b] were owned by, or subject to an obligation of assignment to, Millennium Pharmaceuticals, Inc., and the claimed invention was subject to an obligation of assignment to Millennium Pharmaceuticals, Inc., the statutory requirements of 35 U.S.C. §103(c)(1) are clearly met. Therefore, LaRosa et al. [a] and LaRosa et al. [b] are disqualified from being used in a rejection of the currently pending claims under 35 U.S.C. §103(a), and applicants respectfully request withdrawal of these rejections.

Claims 9-12 were also rejected as allegedly unpatentable over either Hancock et al. (U.S. Patent Publication No. 2002/0042370) or Horvath et al. [b] (U.S. Patent No. 6,663,863) in view of Bonnefoy et al. At the time the claimed invention was made, both Hancock et al. and Horvath et al. [b] were owned by, or subject to an obligation of assignment to, Millennium Pharmaceuticals, Inc. (as evidenced by assignments recorded at reel/frame 012190/0951 and 012006/0037, respectively), and the claimed invention was subject to an obligation of assignment to Millennium Pharmaceuticals, Inc (see above). Therefore, Hancock et al. and Horvath et al. [b] are also disqualified from being used in a rejection of the currently pending claims under 35 U.S.C. §103(a), and applicants respectfully request withdrawal of these rejections.

Claims 9-12 were rejected allegedly unpatentable over either LaRosa et al. [c] (PCT Publication No. WO 01/57226) or Horvath et al. [a] (PCT Publication No. WO 01/70266) in view of Bonnefoy et al. Applicants respectfully traverse the rejection on the ground that there would have been no motivation to select the specific IgG1 heavy chain sequence taught by Bonnefoy et al.

According to the Office Action dated July 21, 2006,

> LaRosa et al. [c] teach a humanized CCR2 specific antibody and antigen-binding fragments thereof comprising the heavy chain variable domain of SEQ ID NO:17 and a light chain variable region of SEQ ID NO:12 . . . . [LaRosa et al. [c]] does not specifically teach a humanized CCR2 specific antibody or antigen-binding fragment thereof comprising the modified human IgG1 heavy chain constant region of SEQ ID NO:110. This deficiency is made up for by the teachings of Bonnefoy et al. (page 11, lines 9-20).

Regarding Horvath et al. [a], the instant Office Action states,

> Horvath et al. [a] teach a humanized CCR2 specific antibody and antigen-binding fragments thereof that inhibit ligand binding to CCR2 for treating a variety of human disorders in which activation of CCR2 is implicated, wherein the humanized antibody comprises a heavy chain sequence comprising the variable heavy domain of SEQ ID NO: 17 and human IgG1 constant region and a light chain sequence comprising the variable light domain of SEQ ID NO: 12 and the human kappa constant region (Ck) . . . . Horvath et al [a] do not specifically teach the modified human IgG1 heavy chain constant region sequence of SEQ ID NO:110. This deficiency is made up for in the teachings of Bonnefoy et al.

Bonnefoy et al. is alleged to cure the deficiency of both LaRosa et al. [c] and Horvath et al. [a]. Bonnefoy et al. disclose a completely different humanized antibody (a humanized CD23 (FcεRII)-specific antibody) that binds to a completely different target than the claimed antibodies. An exemplary humanized CD23-specific antibody disclosed by Bonnefoy contains a portion of SEQ ID NO:110.

Applicants respectfully submit that even if the skilled artisan would have read Bonnefoy et al., there was no suggestion or motivation to select the specific IgG1 heavy chain constant region amino acid sequence of SEQ ID NO:110 to make the instantly claimed humanized CCR2-specific antibodies. Bonnefoy et al. disclose that a constant region for a humanized anti-CD23 antibody can be selected according to the functionality required. "The antibody may be an IgG, such as IgG1, IgG2, IgG3 or IgG4; or IgM, or IgA, IgE, or IgD or a modified variant thereof. The constant domain of the antibody heavy chain may be selected accordingly. The light chain constant domain may be a kappa or lambda domain." (Bonnefoy et al., page 7, lines 1-6). Bonnefoy et al. also states that the constant regions can be modified, e.g., at positions 235 and 237 (page 7, lines 13-14). There is no teaching or motivation in LaRosa et al. [c], Horvath et al.

[a] or Bonnefoy et al. to pair the two elements of the claimed antibody, namely CCR2 specificity and decrease complement fixation.

A disclosure of a heavy chain constant region for one antibody does not suggest that the particular constant region should be selected for the heavy chain constant region of a completely different antibody to a completely different target. In fact, several other references were available at the time of filing that disclose other humanized antibodies and suggest a preference for a completely different heavy chain constant sequence. For example, U.S. Patent No. 6,682,736 describes humanized anti-CTLA antibodies and discloses a preference of sequences for the heavy chain constant region from an IgG2 or IgG4. Other heavy chain constant regions include γ (e.g., γ 1, γ 2, γ 3, γ 4), μ, α (e.g., α 1, α 2), δ or ε heavy chain sequences, mutations of these sequences and various allotypes. Furthermore, even if a skilled artisan were to chose an IgG1 heavy chain constant region from all other available isotypes, there are at least five different allotypes of IgG1, and several different known mutations of these sequences. In all, the potential number of heavy chain constant regions available to a skilled practitioner would be such that selection of any particular sequence would not have been obvious. There was clearly no suggestion that SEQ ID NO:110, *per se*, should be selected for humanization of the CCR2-specific antibodies of LaRosa et al. [c] or Horvath et al. [a] in lieu of any of the other aforementioned sequence possibilities disclosed for a humanized heavy chain constant region. There is no suggestion or motivation to combine anti-CCR2 functionality with any particular constant region and no suggestion or motivation to combine anti-CCR2 functionality with the mutation at residues 235 and 237 to decrease complement fixation.

While the Office Action questions the relevance of U.S. Patent No.: 6,682,736 for this rejection, this patent (and others like it) are relevant to the analysis. This patent demonstrates that at the time the present application was made, there were many different constant regions that could be considered. While Bonnefoy may teach the constant regions of SEQ ID NO:110, amongst others, U.S. Patent No.: 6,682,736 discloses a preference for completely different constant regions. Thus, U.S. Patent No.: 6,682,736 was cited to demonstrate that the constant region of SEQ ID NO:110 disclosed in Bonnefoy et al. was not an obvious selection for the

constant region of the claimed antibodies. Instead, that constant region is just one of many constant regions known and available.

For the reasons discussed above, withdrawal of this rejection is respectfully requested.

CONCLUSION

For at least the reasons set forth above, applicants submit that all grounds for rejection have been overcome and that all claims are now in condition for allowance, which action is respectfully requested.

In the even that a telephone conference could expedite the prosecution of this application, the Examiner is requested to call the undersigned at the number given below.

A Petition for Extension of Time and the required fee are being submitted concurrently herewith on the Electronic Filing System (EFS). Please apply any other charges or credits to deposit account 06-1050, referencing Attorney Docket No. 10448-213001.

Respectfully submitted,

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